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For the information
Supervisor Sierra Forest.

PROGRESS REPORT

INSECT CONTROL - HAYFORK PROJECT (Trinity N.F.)

January 15, 1913.

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PROGRESS REPORT.

January 15, 1913.

The heavy snows in the Hayfork Valley which caused us to shut down the insect control work until probably the last part of February, give an opportunity for this report on the results so far accomplished.

Work was begun November 12, 1912, and, except for a few short interruptions by rain, was carried on until the evening of January 7, 1913. During that time 741 trees, from 4" to 52" D.B.H., were treated with a cost for labor and subsistence (not including equipment, travel, and supervision) of $940.00, or $1.27 per tree. This work covered the area north of the Hayfork Creek between Big Creek and the VanMatre ranch up to the summit and also most of the area south of the Hayfork and east of the Salt Creek to the top of the ridge.

METHOD OF WORK.

Locating Infested Trees.

Small watersheds of the infested area are taken as units. A "spotter", provided with a 4" scale sketch of the area and a pocket compass, makes the examination

by zig-zaging along one slope of the watershed, locating and recording all infested trees. He keeps a note-book record of the number, D.B.H., species of insect, and color of foliage. He also puts in all the minor details of topography; shows the location of all infested trees by dots, and gives the number and diameter of the tree on the map. He blazes and numbers each tree at the base and on three sides. These blazes help the "fallers" greatly in locating trees, especially if the foliage is still green. Where the ridges are high and the slopes steep the spotter can cover the area by walking up and down the tops of the main ridges, going down into the canyon only occasionally, as most of the infestation is on the tops of ridges. The canyons contain a large percentage of Douglas fir, and moisture and light conditions are not as favorable to the spread of insect infestation.

Some of the men in the crew have felt that each falling crew could do its own spotting but I think a spotter is quite essential for properly conducting the work.

Treatment of Infested Trees.

Crews of two men each are used. They are given a sketch map, showing topography and all infested trees with number and diameter, for a particular unit or area. Each crew is equipped with a light "felling saw", two double-bit

axes, one rake, two canteens, a file, a whet-stone, and at times, a light wedge which can be carried in the pocket. The light seven foot felling saws five or six inches in width are the best. They not only work better in the Yellow Pine but are much easier to pack around the woods. After trying shovels, forks, and rakes for cleaning up the small pieces of bark we decided the rake was the best all around tool.

After falling the tree the crew lops the branches and piles the brush around the top of the trunk, care being taken to make the brush piles compact enough to insure burning. The balance of the bole and stump are then peeled and the bark strewn along the bole or thrown in small piles and burned. Each crew keeps a record of the number of the tree and the time spent in treating each tree. Aside from cost records this data is valuable in keeping a line on what each crew accomplishes.

In case the trees have green foliage - damp enough to cause trouble in burning - we find it pays to peel the bark from most of the trunk, making a very compact pile of bark and brush at the top of the tree which burns readily. Trees should rarely, if ever, be left to be burned at a later period.

The falling crews are instructed to watch closely

for infested trees overlooked by the spotter. They have found about ten per cent of the total number treated, in this manner. A good percentage of these are green where the only evidences of infestation are pitch tubes or woodpecker markings and in some cases the needles seem to be twisted and do not radiate out from the stem as they do in healthy trees. Out of the 741 trees about 60 had green foliage.

On heavily infested areas like this a crew of twelve men, aside from the one in charge is best; five falling crews, a spotter and a cook. Where the infestation is more scattering probably two or three, two-man crews would be more efficient and in some cases where the trees are very scattering two men could be given a small camping and falling outfit and put to work independently.

COSTS - WHOLE OPERATION.

1.	Total cost of work from November 12, 1912, to January 7, 1913, inclusive, for labor and subsistence (not including equipment, travel of rangers, and supervision)	$940.00
2.	Total number of trees treated	741
3.	Average cost per tree	$1.27
4.	Area covered - acres	11,560

5.	Cost per acre	$ .08
6.	Number of trees per section	41
7.	Average diameter of trees	19.8 inches

Detailed time and cost figures were kept for 299 trees. For 75 of these separate time was kept for (1) falling, (2) lopping and piling, (3) burning, (4) walking to tree. (The whole time spent each day in walking being proportionally distributed over the total number of trees cut for an eight hour day. The employees walk to work on government time and return on their own.) For the balance of the trees only the time spent in (1) treating the tree and (2) walking, was kept.

The trees were divided into four diameter groups; (1) 4"-10" inclusive, (2) 12"-22", (3) 24"-34", and (4) 36" and over. An allowance of 10 bd. ft. was made for 4-6" trees. Temporary labor cost $3.00 per day. Ranger labor $4.06 per day. "Hours per tree" is figured on a one man basis.

Average Figures on Trees Where Records Were Kept.

299 trees.

19.8" D.B.H.

705 bd. ft.

48 min. spent in walking to tree.

2 hrs. 30 min. spent in treating tree.

$1.32 cost of treating tree.

$1.87 " per M Bd. Ft.

Trees Where Separate Time to Fall, Lop and Pile, and Burn, Was Kept.

Trees 4" - 10" inc. D.B.H. Averages for 23 trees.

7.4" D.B.H.

20.4 Bd. Ft.

35 min. walking.

17 " falling and lopping.

18 " burning.

$.52 cost per tree.

Trees 12" - 22" inc. D.B.H. Averages for 20 trees.

15" D.B.H.

98 Bd. Ft.

28 min. walking.

15 " falling.

69 " lopping and piling.

33 " burning.

$.99 cost per tree.

Trees 24" - 34" inc. D.B.H. Averages for 18 trees.

28" D.B.H.

948 Bd. Ft.

50 min. walking.

26 " falling.

2 hrs. 48 min. lopping and piling.

1 hr. 22 min. burning.

$2.37 cost per tree.

Trees 36" and over D.B.H. Averages for 14 trees.

39" D.B.H.

3091 Bd. Ft.

2 hrs. walking.

1 hr. falling.

3 hrs. 19 min. lopping and piling.

1 hr. 26 min. burning.

$3.13 cost per tree.

Trees Where Only Total Time to Treat Tree Was Kept.

Trees 4" - 10" inc. D.B.H. Averages for 82 trees.

5.8" D.B.H.

18 Bd. Ft.

19 min. walking.

33 min. treating.

$.35 cost per tree.

Trees 12" - 22" inc. D.B.H. Averages for 53 trees.

16.5" D.B.H.

171 Bd. Ft.

39 min. walking.

1 hr. 40 min. treating.

$.93 cost per tree.

Trees 24" - 34" inc. D.B.H. Averages for 63 trees.